

Cont'd from 1st column...

In 1978 we would like to establish some sort of bench classes for upgrading the knowledge of our members when it comes to the trouble shooting part of ham radio. If we could get some people to help with this, this would be another step to making 1978 a better year for the club.

Nevertheless, here we are going into the new year with the same enthusiasm as we had in the past and trust you will all find it a memorable one.

Events

SPECIAL EVENTS STATION
KM1CC WILL BE ACTIVE JAN-
UARY 14-JANUARY 22 CELEBRATING THE 75TH
ANNIVERSARY OF THE FIRST TWO-WAY TELEGRAPH
TRANSMISSION BY MARCONI X 73 BT KIVV AR

This message was relayed recently through the National Traffic System, marking amateur radio's recognition of Signor Guglielmo Marconi's breakthrough in radio research in 1903.

Setting up shop near the crumbling ruins of Marconi's station at South Wellfleet, Mass., the Barnstable Amateur Radio Club special events station (the last special events license issued by the FCC) is looking for operators, especially on week-days, so all modes can be used, and the FCC has permitted the station to operate A-2 on all amateur bands so that the sound of the 240Hz Marconi rotary spark gap "CC" can be sent on all CW QSO's. According to some oldtimers, you could hear that distinctive sound for miles, even without a receiver.

KM1CC's Control Operator, Whitey Doherty asks volunteers to contact him (RFD #1, 14 Pine St., Sandwich, Ma. 02563) so that he can set up a schedule. Antennas will be supplied, but he asks that operators bring their own rigs, keyers, and accessories to eliminate problems of being unfamiliar with other equipment.

Guglielmo Marconi was born in Bologna, Italy in 1874. While he grew up, Marconi developed an interest in the sciences, and eventually studied physics. He paid particularly close attention to the research

MEETINGS THIS MONTH:

January 5

January 19 at 7:30 P.M.

Intermediate Bldg., Wellesley Hills, Mass.



A Happy New Year to all of you. We do hope that Santa Claus was good to you and now that the New Year's hangover is over with, we can now get into the swing of the 1978 season.

In the previous edition we looked back on the year just ended to see where we had been and it seems fitting that with this issue, we look forward to where we should go, keeping in mind our dedication to the betterment of the amateur radio fraternity.

The executive board has been planning activities for the coming months but we still would like to hear from you regarding anything you would like to see covered in our coming activities or meetings. We have for starters at our Jan. 19th meeting George Downes, W1CT, who will be speaking on CW. You may have heard George before, speaking on propagation, so you know what an interesting person he is. Then in Feb. we will have a speaker from the Federal Aviation Agency to talk but at this moment I have no particulars but will follow up in the next edition.

Our Novice and General classes will resume around the 16th of the month but we will need volunteers to instruct in both of these classes. Our past teachers would be happy to do this but it doesn't seem fair to ask them again and again even though they would come forth on a moment's notice to teach. They have done an outstanding job and deserve credit for giving of their time and talents. However, we would like to hear from anyone interested in taking up this challenging job.

that had been done by Hertz, Maxwell, Lodge and others--information that would serve as the foundation for his development of radio telegraphy and radio telephony.

By 1894, Marconi was experimenting with crude spark gap apparatus on his father's estate near Bologna. His experiments led to a radio transmission of about 1½ miles.

His experiments weren't greeted with much enthusiasm in Italy, so Marconi moved to England in 1896 to continue his work. By 1899, Marconi had successfully completed two-way communications across the English Channel. And the British Navy had installed some of Marconi's equipment on its battleships, enabling them to communicate over distances of up to 75 miles. Later the same year, he placed his "rig" on two US ships and wired the results of the America's Cup Race from the scene to The New York Herald.

Undaunted by scientists who felt that the curvature of the earth would limit practical communications to about 150 miles, Marconi set up a trans-Atlantic transmitting station in Cornwall, England, and a planned receiving station at South Wellfleet, Mass.

Unfortunately, both stations were virtually destroyed by gales within a week of each other. Marconi was able to quickly rebuild the Cornwall station, but moved his North American link to St. John's, Newfoundland while the Massachusetts station was being rebuilt. In December of 1901, Marconi successfully received the letter "S" sent from England.

However, threatened by a suit from a local telegraph company, he began a search for a new site for his station. The Canadian Government offered him a site at Glace Bay, Nova Scotia, where, in 1902, he sent the first readable message to the station in Cornwall. At this point, transatlantic communication was shown practical.

After the South Wellfleet, Mass., station had been rebuilt, Marconi moved his equipment there for the big experiment, two-way communications between Europe and the United States.

Ironically, Marconi's original plan called for relaying the message from Massachusetts to Nova Scotia to Cornwall. But Mother Nature was to alter that slightly.

The message, a greeting from President Theodore Roosevelt to King Edward VII, was sent to Nova Scotia, but the station in Cornwall picked it up at the same time. When the King's reply came in, Marconi was elated when he found out that the message came directly from England, bypassing the Nova Scotia link.

Thus, the first two-way radio transmission across the Atlantic became history.

Before his passing in 1937, Marconi initiated many improvements in the new-fangled "wireless" gear. And he forged ahead as a pioneer in VHF/UHF communications. Newspaper editorials of the day not only heralded each new Marconi discovery, but even prophetically suggested that electrical power for homes and industry might one day be beamed by radio from hydroelectric stations that might be built to harness the great rivers in Asia and Africa. Today, scientists are studying the possibility of sending electricity from orbiting "solar" power stations to earth via microwaves.

As each successive application of radio becomes commonplace, the debt we owe to one Italian scientist who was able to piece together the scientific knowledge gained over a two-century period and put it into a single device, grows immeasurably. de Pete Spotts, WB1BUP

Events THE NATICK MALL MESSAGE FAIR is now history and once again, it was a successful venture. We started off a little slow due to some inclement wintry weather on Monday and Tuesday nights but after that they opened up the floodgates and we finally ended up by originating 1242 pieces of traffic, which bettered last years mark of 908 pieces.

Participation within the club was tremendous and it was gratifying to see some of the newer members getting their baptism of fire in the art of handling and originating traffic. Even some oldsters took a part here and one person said, Boy, I used to handle traffic years ago but this was really exciting to get my fingers back in it again.

Then there was the letter written to the club from another non-ham saying it was really nice to send out a wireless radiogram to his grandchildren and not to stop doing this kind of a public service,

The Spark Gap

Official Journal of the Wellesley Amateur Radio Society



EDITOR-IN-CHIEF, JAMES W. HATHERLEY

THE "SPARK GAP" IS A MONTHLY PUBLICATION OF THE WELLESLEY AMATEUR RADIO SOCIETY. ITS SOLE PURPOSE IS TO KEEP ITS MEMBERS ABREAST OF CURRENT HAPPENINGS, F.C.C. RULES & REGULATIONS CHANGES AND TO LIST EQUIPMENT OFFERED FOR SALE OR TRADE BY MEMBERS. MEMBERS ARE ENCOURAGED TO CONTRIBUTE TO THE SPARK GAP AND MAY SEND THEIR ARTICLES (TYPEWRITTEN IF POSSIBLE) TO THE EDITOR-IN-CHIEF OR TO THE CLUB ADDRESS.

THE WELLESLEY AMATEUR RADIO SOCIETY IS A NON-PROFIT ORGANIZATION DEDICATED TO THE PROMOTION OF AMATEUR RADIO THROUGH INSTRUCTION, FELLOWSHIP, DEMONSTRATION AND ENCOURAGED PARTICIPATION. ANNUAL MEMBERSHIP IN THE SOCIETY-\$5.00. CLUB YEAR RUNS FROM SEPTEMBER 1 - JUNE 30. AMATEUR NOVICE AND GENERAL CLASSES ARE CONDUCTED REGULARLY AT NO COST. TO ENROLL IN A CLASS OR GAIN INFORMATION ABOUT THE SOCIETY IN GENERAL, WRITE THE WELLESLEY AMATEUR RADIO SOCIETY, 324 WASHINGTON STREET WELLESLEY HILLS, MASS 02181



NATICK MALL....CONT'D.....

so, hearing things like this makes you feel that you aren't doing all this for naught.

Then there were the outside hams who took the long haul traffic for relay to the National Traffic System who, once again, proved their mettle. We had check-ins from all over the New England area as well as New York State and Pennsylvania. At one time on the 15 meter band I was calling up local operators to check in when a guy came back from Vienna, Austria to see if he could help but being one of those places where third party traffic is not valid, we had to pass up his offer of help. I guess we were getting out pretty well.

At the mall we had all sorts of literature about amateur radio and one special brochure we had made up for the club that was a masterpiece. The people seemed very interested in what we were doing and were fascinated to watch the traffic being sent out from the mall.

On Friday night we were visited by the Channel 5 newsteam and got some good public relations on the 11:00 PM newscast. All in all, it was a good activity and we

NATICK MALL....CONT'D.....

gave a good account of ourselves and it is with gratitude that we say publicly, our thanks to those in the club, too numerous to name everyone, to the Mall officials for allowing us to operate there and with their help in providing us with tables and operating space, and to all the hams throughout the country who handled our traffic as this was a team effort to be sure. Hope to see you there next year.

ANNOUNCEMENT

OFFICIAL ARRL BULLETIN NR 684 DEC.15, 1977
BT A major justification for the Amateur Radio Service lies in the public service rendered by amateurs. Hams will be afforded the opportunity to show what they can do in an organized public service program by participating in the annual ARRL Simulated Emergency Test. The exercise will center on the weekend of January 28-29, 1978. At that time, hams throughout the United States and Canada will be operating within emergency scenarios. Full SET details appear on pages 70-72 December QST AR

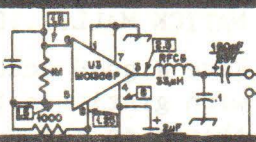
This radiogram just arrived from the ARRL and is a reminder that we should be ready to assist in communications should any disaster occur. This falls in line with the next article to follow:

Many disasters have struck over the years and amateur operators have participated to provide needed and vital communications. Would we in the Boston area, be able to provide these same public services if a disaster struck our region? This important aspect of ham radio will be put to the test on January 29th when we will be conducting our SET (Simulated Emergency Test) event. The SET will be a challenge to the Wellesley Amateur Radio Society.

The only requirement to participate in this event is a 2-meter fm radio, either mobile or walkie type, as we will be using this mode during the exercise. You are invited to sign up at the January 5th meeting or notify Scott Nacey, W1Y0J, on the club repeater of your intentions to participate. In order for this to be an effective test of our preparedness, we need as many people as possible to join us.

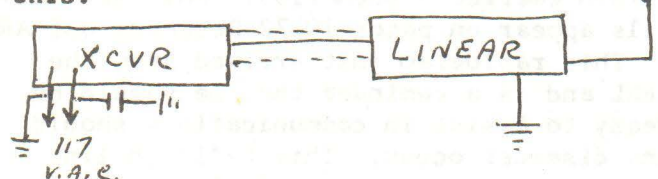
de Scott Nacey, W1Y0J

Tek Tok

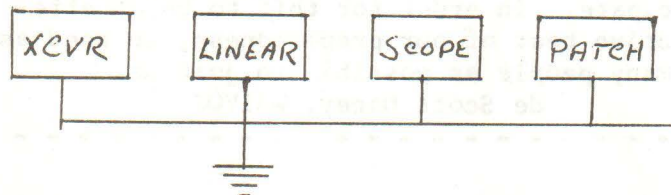


Have you heard hum in one of your audio systems? Been shocked when you touched two different cabinets? Could be improper grounding of your station equipment. Too often, the importance of proper grounding is overlooked by amateur operators. Many operators think they have proper grounding, because "each cabinet (receiver, transmitter, scope, patch, etc.) goes to an outside ground or pipe". Such technique may involve running wires to a separate ground; a cold water pipe or a ground rod in Mother Earth.

The big key words to a good ground for the station are "common ground". If two or more pieces of equipment happen to have separate grounds, then circulating A.C. currents, or "ground loops", can be established which cause hum, interference, and shock hazard. How can improper grounding cause hum on your signal? Let's analyze this:



Now, considering circulating current, if the transceiver does not have a "common ground" with the linear, A.C. will flow from main lines, through by-pass capacitors transformers, or filament grounds to chassis down the shield of the coax, to the linear and back to "Mother Earth". The magnetic field around the coax will produce an alternating current in the inner conductor, hence; hum. And that A.C. or hum will be transmitted along with your signal. Also, since each piece of equipment is at a different "ground potential", a shock hazard may exist. Did you ever "burn your lip" slightly by touching your mike? This is due to different "ground potential" between your mike housing, the rig and actual ground. Make all grounds "common" like this:

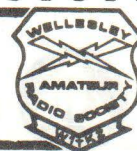


TEK-TOK..CONT'D.....

This can best be accomplished by running a thick braid, such as a piece of shield, from RG8/U, along the back of the operating table, and soldering lengths of braid from each item, to the braid. Of course, very low ohmic values of ground line are desirable, so keep all ground lines as short as possible, make a good "Mother Earth" ground with long pipe, (or two or more pipes). Sometimes, certain lengths of ground line may cause resonance problems and cause circulating currents. Your SWR bridge may read a little higher than it should. If this happens, experiment with different lengths of ground line from station to "Mother Earth".

Your ground is just as important as your antenna! Your equipment will perform better and be much safer with proper ground systems.

QSY PLEASE, de WTKZ



CONTESTING.....by Nels Anderson, WAI

With all the variety of interests in the club, it seems that one ham activity, little represented, is contesting. It seems that at least some of this lack of activity is because people do not understand how contests work.

Contests vary in format but they all have several things in common. The basis of any contest is to contact as many other stations as possible. In addition, in most contests, the number of contacts is multiplied by something. The multipliers vary according to the objective of the contest, for example, in the DX contest, the multiplier is the number of DXCC countries worked, or in Sweepstakes, the multiplier is the number of ARRL sections. The other common factor is some sort of exchange between the two stations working each other. This also varies according to the type of contest, but in many consists of a signal report and some indication of geographical location. Consecutive serial numbers are also common.

Still, why contest? There are a variety of reasons. Like any operating activity, contesting will increase your operating proficiency. If you are working

QSY PLEASECONTESTING-Cont'd.

on WAS, DXCC, or any other award, contests are a good time to pick up new stations toward the award.

A contest is also a good test of your station. Say you just put up a new antenna and want to see how it works. What better way to make a lot of contacts in a short period than a contest! Of course there's always the pure fun of contesting, to improve your score over previous years, and maybe someday, even win your section.

Above all, in addition to other reasons, contests are fun. Hope to see you on some day. "CQ Contest"...de Nels, WALTUH.

OFFICIAL BULLETIN

OFFICIAL BULLETIN NR 679 November 17, 1977
BT On October 29, 1977, YV5ZZ and LU1DAU set a new DX record on the 2-meter band, without the use of artificial satellites or EME (moonbounce). The record breaking 3135 mile (5044 kilometer) QSO was made after two years of scheduling and broke the previous record of 2540 miles (4087km) set by W6NLZ and KH6UK in 1957. January will carry further details. AR

NR 681 December 1, 1977 BT

The United States has entered into bilateral agreements with 48 countries under which amateurs of one country may obtain permission to operate in the other. Latest of these is one between the United States and the Republic of Liberia. Another series of agreements permits the exchange of messages on behalf of third parties between amateurs of the two countries. Such an agreement with the Republic of Ghana became effective November 2. Such agreements are limited to personal messages not important enough to justify use of the public telecommunications system. Permissible prefixes for this traffic include: LU CP PY VE VO CE HK TI CM CO HI HC YS 9G1 TG 8R HH HR 4X4 4Z4 JY EL XE YN HP ZP OA 9Y4 CX YV AR

NR 682 December 8, 1977

BT The ARRL Board of Directors meets twice yearly to formulate the course of ARRL affairs. The first meeting of 1978 takes place January 19. ARRL full members elect the Board which has the overall responsibility for managing the affairs of the League. This democratic process is effective

OFFICIAL BULLETINS.....Cont'd....

only to the extent that the membership participates. Now is the time for members and affiliated clubs to communicate with their division director at the address shown on Page 8 of any 1977 QST or via ARRL for newly elected directors AR

NEW CLUB MEMBERS

We would like to welcome to the club the following new members: Mark Dinman, WB1FCO, Tony Fusco, WB1FTD, Scott Levin, WB1FGI, Louis Jansen, W1FL, Mark Keller, WB1AMY, Gary Anderson, WB1DGV, Rex D'Agostino WB1FTM, Frank Callahan and Ed Pavone whose calls I don't have yet, and Carl Levine, WB1ECK.

As members of this club, you are entitled to all the facilities of the club, including use of the club station. It would also be nice if you were to wear your nameplates to the meetings so other members will know who you are. If you don't have a nameplate, inquire at the meeting.

"New Tickets"



This is always a nice part of the Gap to write about as it is to congratulate those guys and gals who have upgraded their licenses after a lot of hard work and study on their parts. So, a HEARTY WELL DONE to new Techs, Jim Novakoff, WB1BUY, Norris Bond, W1WKR, and Ken Veznaian, WB1FCY. Upgrading to General were Ted Gruber, WB1ECE and Joe Garfield, WB1BUZ.

We wish you all good luck in your new frequencies.

Any other upgrades, please notify Jim Hatherley, W1TBY so he can air it in the Gap. Tel. #254 6042 or write 46 Hobson St., Brighton, Mass, 02135.

What is your code speed? The record is 75 wpm set in 1939 by Ted McElroy.

Incidentally, there is a good article in the December QST entitled "How to adjust a straight key and send good code". I think you will all find it informative.

profiles

by Pete Spotts

Take one intelligent coed majoring in molecular biology, add one math-economic degree holder from Bowdoin College now working for his father, and who do you get? Glenn and Nina Brodié!

Both having grown up in Duxbury, Mass., Glenn and Nina fall into that rapidly disappearing group known as "high school sweethearts." Both attended Duxbury Elementary and Middle Schools. But, by the time they went to high school, they found themselves in two states. Glenn attended a private high school in Connecticut from the 11th grade until graduation, and Nina went to high school at a private school in Easthampton, Mass. Holidays and vacations provided the trysting times necessary to keep things glowing.



College wasn't much different. Glenn did his undergraduate work at Bowdoin College in New Brunswick, Maine. Nina spent her freshman and sophomore years at Mt. Holyoke College. Their mutual interests in sailing and hiking again provided ample opportunity for fun during the breaks in school.

In talking about their activities, Glenn also mentioned that he and Nina ski. But Glenn hastily adds, "She taught me how to ski AFTER we got married."

Glenn graduated in 1976. One week later he and Nina were newlyweds. Looking back on that week, he says, a bit tongue-in-cheek, "Things happened pretty fast!"

Nina is a senior at Wellesley College and expects to graduate this June. After

PROFILES.....CONT'D.....

graduation Nina wants to do the post-graduate work necessary to prepare her for a career either in veterinary medicine or in marine research. She's cast her eyes on MIT's oceanography program at Wood's Hole, or the University of Rhode Island as possibilities for marine research.

Glenn is also giving serious thought to doing post-graduate work at Sloan Business School at MIT. Currently, he works as a salesman/estimator for his father's firm, New England Insulating Company.

What about ham radio?

Nina, WB1ECJ is taking an independent study course designed uniquely for her in amateur radio. Not only will the course provide the necessary impetus for upgrading her novice license, but the course also counts as credit towards graduation.

Glenn, WB1BVN, holds a Technician license, which he intends to upgrade "as soon as I can get my code speed up."

Nina, aside from ham radio, also is interested in printing—"as a hobby," she says. With the aid of another WARS member she has a printing press at home and is exploring printing's artistic potential.

The BVN/ECJ shack consists of a Heathkit HW-101 transceiver, (which he built), its' power supply (which she built) and



Glenn's Drake TR33-C 2-meter transceiver. These, plus two dogs and one cat, (Heath-Kitten) make for plenty of activity around la maison Brodié.

Glenn and Nina also make a valuable contribution to the Wellesley Amateur Radio

PROFILES.....CONT'D.....

Society. Glenn as Correspondence Secretary is responsible for mailing out the Spark, amongst other duties, and Nina is the club's Recording Secretary.

Whatever their future plans, we hope they'll include WARS, of which they are an integral part. de Pete Spotts, WB1BUP AR

“timeout!”

By Mike Adlerstein, K1FB

This past fall, I had the pleasure of hearing a talk by Dr. Steve Rudin, W1WSN, who is a leading authority on Amateur two meter communications. One point he made, with which I agree, concerned the high quality of 2 meter activity in the New England area.

Indeed, of all areas in the country, New England ranks near the top in terms of repeater accessibility, technical quality and operator proficiency. Repeaters here, are friendly places. They are not so crowded as to squeeze out extended QSOs. There are no (to my knowledge) "private" repeaters where only stations having certain access codes can be users. Open autopatches are common here and, in general, they are not abused.

The incidence of malicious interference is lower here than in most other metropolitan areas of comparable size.

When was the last time you heard of a repeater war, when groups of amateurs fought it out for a particular channel? These days it's all coordinated in a gentlemanly fashion.

Yes, each New England repeater has its particular personality and all will not suit each of us. But we have much to be thankful for, and proud of. We've all made it what it is. AR de K1FB

Hereabouts...

Maurice Puento has been pretty busy as of late. Besides moving to a new house, he became a father again, his second son, and as if this weren't enough, he is now in the process of getting his antennas up at the new QTH. Maurice is WB1DZX.

Jim Murphy, WB1BUR has a new HY-Gain tri-beam at his Revere QTH.

HEARABOUTS.....CONT'D.....

Dick Magnanti, WB1BUQ, is also doing something with antennas, he now has an all band vertical sitting on top of his roof.

George Young, W1YAU, has moved to a new qth but so far haven't heard him on the air and wonder if he got his antenna airborne. Let's get going George.

Chad Johnson, W1YHT, has a new Kenwood TS-520-C which he brought up to the Natick Mall for a christening and it worked out just fine.



By Bob Rudko, W1HSS

This is the first in a series of articles about DX. In these articles we will discuss various aspects of DX, including what it is, where it is, how to work it, and how to get DX QSL'S. In this first article, we will discuss what constitutes a DX station and what is DXCC.

DX actually stands for "exceptional distance," and a DX station was originally a station that was a long distance away. In fact, on the VHF and UHF bands, this definition is still used. However, on the HF bands, a DX station has come to mean a station that is not in your DXCC "country" as defined in the ARRL Countries list. A country as defined by the ARRL can be (and in many cases, is) considerably different than what is normally considered a country. For example, the ARRL considers Alaska and Hawaii to be countries. At present, the ARRL lists a total of 319 DXCC countries.

To get the DX Century Club (DXCC) Award, you must submit confirmation of QSO's with 100 or more DXCC countries. When you get within ten of the maximum number of listed countries, you will be put on the DXCC Honor Roll. This means that, in order to be on the Honor Roll today, you must have QSL cards from 309 or more of the 319 countries. This is a very difficult task, and usually takes many years of hard DXing to achieve.

At present, there are six separate DXCC awards available:

- (1) Mixed: Contacts may be made using any mode.
- (2) Phone: Contacts must be made using radiotelephone.

DXing.....CONT'D.....

- (3) CW: Contacts must be made using CW.
- (4) RTTY: Contacts must be made using radio teletype.
- (5) 160 Meter: Contacts must be made on 160 meters.
- (6) 5-Band DXCC: One hundred countries must be worked on each of the following bands: 80, 40, 20, 15 and 10 meters.

A recent rule change now requires that to get credit for a specific mode of operation, both stations must use the same mode.

Getting the DXCC award is a good goal to aim for. With band conditions as they have been over the past year, an average station should be able to work 100 DXCC countries in about a year with several hours per week of operating time.

Next month, we will discuss a good time to pick up a large number of countries without much effort (that is, during the ARRL DX contest!). De Bob Rudko.

ELECTRONIC EXCHANGE

FOR SALE: Regency 2-meter 25 watt transmitter. 12 channels fully crystallized and in excellent condition. \$175.00. Call Jack, K1ZYG, at 244 7779.

For Sale: Microphone D-104 Astatic with push to talk stand. \$25.00. Call Mike, K1FB, at 235 1130.

For Sale: RG8 coaxial cable at 15 cents per foot. Call Tony, WB1BUS at 491 1554.

This section is for your use. If you are looking for anything or want to sell something, write or call Jim Hatherley WALTBY.

----- AUCTION AND FLEA MARKET NOTES:

Jan. 21 The 25-85 Interstate Repeater Association will be having their auction at the Manchester Armory, Manchester, NH. Take Rte I93 to Amoskeg Bridge exit. Talk in on 25-85 or 52 direct. Time 10:00 to 5:30.

The Horse Traders Swap Net meets on Sun. afternoons on 3940 Khz from 4-6 PM.

Talked to Allan Kuong, W1SCS, who is home over the holidays from Annapolis and he wanted to extend his holiday wishes to all in the club and though he hasn't been home to attend the club meetings, he do keep abreast of things with his copy of the Spark Gap which is delivered to him at the Academy. Allen is a Junior there and would like to get into the flying end of the Military business.

Well guys and gals, I guess this is about it for this edition. It has been a wonderful 1977 but yesterday's victories and 30 cents still buys a cup of coffee, so lets go into this new year with the same enthusiasm and dedication that we are doing our bit for the betterment of amateur radio.

Don't forget to send us your thoughts on things you would like to see happen in the club's activities and finally, we would like to hear from people interested in helping with our Educational programs with the Novice and General Classes. Just call Chris Wiles, W1RGA at 235 9095 or Bill Downing, W1PQY at 235 4484 so they can schedule you for the classes.

73,

Jim Hatherley WALTBY
Editor